

bengalensis in Udaipur district, Rajasthan.

To know more about the ticks of reptiles of southern Rajasthan, many reptiles killed on the Kotra Paliyakheda and Jhadol-Gorana road in Udaipur district, Rajasthan were examined and the ticks collected. The samples were sent to the Zoological Survey of India, Kolkata, for identification. Besides *Aponomma gervaisi* on *Varanus bengalensis*, two other species of ticks were also recorded (Table 1).

ACKNOWLEDGEMENT

I thank Dr. A.K. Sanyal, Scientist 'E' and Officer-in-charge, Acarology Section, ZSI, Kolkata for identification of the ticks.

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18. ON THE NATURAL HISTORY OF *BUFO PARIETALIS* BOULENGER, 1882, AMPHIBIA: FAMILY BUFONIDAE

Bufo parietalis was described by Boulenger (1882) from the south Indian state of Kerala. The only record of the species from Karnataka is that of Daniels (1992), who reported one adult from the evergreen forest leaf litter in Charmadi Ghats. This is the first report of populations of the species from Karnataka. We discuss the new range in Pushpagiri Wildlife Sanctuary, Karnataka, its call, habits, food and breeding season.

The Pushpagiri Wildlife Sanctuary in Karnataka (12° 15' N; 75° 33' E) on the western slope of the Western Ghats ranges from 125 m above msl at Subramannya to 1,400 m above msl at Kumaraparvatha. The vegetation is Semi-evergreen with high canopy cover. However, due to selective felling 25 years ago, the forest is secondary. Though there is an annual harvest of cane and other minor forest produce, there are no human settlements within the forest. The day temperature ranges from 26-29 °C and the night temperature at 2000 hrs is around 18 °C in the post monsoon season. The annual monsoon rainfall totals 400 cm. A few showers are received in November and January. This tropical rain forest supports many perennial hill streams with rocky puddles, which are often used by the toad for breeding.

We surveyed the forest for amphibians in 1998-2000 by walking along six well spaced

transects. Transects were placed in three altitudinal classes. A total of 21 km were walked in 18 months.

This large, terrestrial and crepuscular forest toad has prominent parotid ridges. The parotid glands are enlarged during the breeding season. The dorsal surface is black, the skin rough and irregularly folded. Supraorbital, postorbital and parietal ridges are contiguous. Ventrally, it is white with dark brown speckles.

Altitudinal preferences: The rainforest toad population was unevenly distributed within the forest and seemed to have altitudinal preferences. In the study area, they were observed to occur between 150 m and 360 m above msl. However, elsewhere in India, they occur at 500 m above msl or more (Daniels 1992).

Morphometrics: The average snout to vent length (SVL) of male toads measured 62.55 mm (N=22) and of females 96.41 mm (N=18). The toad was previously known to reach 85 mm (Daniel 1963), while the largest we recorded was 105.6 mm.

Habits: We observed that the toad goes into dormancy during the peak monsoon months (June to August) and breeds in February (Table 1).

Feeding: The toads were seen catching and eating low flying and crawling insects such as fruitflies (*Drosophila melanogaster*), ants and grasshoppers. The fecal contents revealed

TABLE 1
ACTIVITY PATTERN OF *BUFO PARIETALIS* IN
PUSHPAGIRI WILDLIFE SANCTUARY, KARNATAKA

Months	Activity	Time (hrs)
Feb.-Mar.	Calling chorus, aggregation, breeding	1830 to 0545 (Daily)
Apr.-May	Feeding, resting in water	1900 to 2400 (once in 7-10 days)
Jun.-Aug.	Dormancy	—
Sep.-Jan.	Feeding	1840 to 0600 (Daily)

fruitflies as the principal constituent of the diet, along with ants and cockroaches. A 30.5 mm cockroach wing was observed in the excreta of a female toad (105.6 mm SVL).

Calling: During the breeding season, hundreds of male toads called in chorus. The call was loud, harsh and aggressive, and given in series of 11-18. The low tone call resembled that of the pond heron (*Ardeola grayii*) — *kwak kwak kwak kwak*. The number of calls varied from 11-28 per minute.

Breeding: Not much is known of the breeding season of these toads. In Silent Valley, it breeds during December (Daniels 1992). We observed breeding from February to March. More than 200 calling males gather around the puddles of the perennial slow streams that flow under

the canopy cover. All the puddles (n=8) measured 2-3 m in width with 30 cm deep clear water, and plenty of decaying vegetation. The water temperature was 28 °C. After the initial calling, amplexus was observed in more than 50 frogs. The amplexus remained for more than 12 hrs, and continued even during the day in the water. A clutch-size of approximately 200 eggs was observed in two cases.

ACKNOWLEDGEMENTS

We thank Mr. Shivanna Hassan, Deputy Conservator of Forests, Karnataka Forest Department, for permission to undertake the study. We acknowledge Prof. Hegde, Vice Chancellor, University of Mysore and Prof. Cletus D'Souza for encouragement. The study was funded through the India Programs of the Wildlife Conservation Society, New York.

March 21, 2001

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19. DISTRIBUTION OF *BUFO STOMATICUS* LÜTKEN, AMPHIBIA: FAMILY BUFONIDAE, IN ASSAM, NORTHEAST INDIA

Bufo stomaticus Lütken (Anura: Bufonidae) is a tropical and subtropical species occurring in a variety of conditions from warm, humid, mixed forests to almost perennially arid, stony places, supporting only scattered shrubs and grasses. However, its abundance is greater in regions experiencing dry and wet seasons supported by a

monsoon climate (Auffenberg and Rehman 1997). Lütken originally described *Bufo stomaticus* from Assam (Dutta 1997), but did not specify a locality. Later, it was described as a common species from the Indian subcontinent (Lower Bengal: Annandale 1909; Maharashtra: Yazdani and Mahabal 1976; Himachal Pradesh: Tilak and